



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,916	09/06/2001	Hiroyuki Ehara	L9289.01180	5998

24257 7590 10/04/2005

STEVENS DAVIS MILLER & MOSHER, LLP
1615 L STREET, NW
SUITE 850
WASHINGTON, DC 20036

EXAMINER

CHAWAN, VIJAY B

ART UNIT	PAPER NUMBER
----------	--------------

2654

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,916

Applicant(s)

EHARA, HIROYUKI

Examiner

Vijay B. Chawan

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the Applicant's correspondence filed 7/13/05.

Claim Objections

2. Claims 17, 18, 19 are objected to because of the following informalities:

In claims 17 and 18, it is not clear from the claim language, how "the mode determining apparatus of claim utilizes the quantized LSP parameter generated in the decoder".

In claim 19, should "an LPC" be "an LPC parameter"? Also " a noise code vector comprising one of a pulse and a noise", it is not clear what a pulse and a noise is. There are other instances in the claim language, where ambiguities such as these exist and should be corrected. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2654

4. Claims 13-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizuno et al., (5,732,392).

As per claim 13, Mizuno et al., teaches a mode determining apparatus comprising:

a detector that detects changes in a quantized LSP parameter in a predetermined period of time (Col.2, lines 29-30); and,

a mode determiner that determines, based on a detection result of said detector, whether or not the predetermined period indicates a speech mode (Col.2, lines 34-37).

As per claim 14, Mizuno et al., teaches the mode determining apparatus of claim 13, wherein the mode determiner determines that the predetermined period indicates the speech mode when the detector detects a change greater than a predetermined level in relation to at least one order component (Col.2, lines 31-33).

As per claim 15, Mizuno et al., teaches a mode determining apparatus comprising:

an average LSP calculator that calculates an average quantized LSP parameter in a period in which a quantized LSP parameter is stationary (Col.4, lines 4-30);

a difference calculator that calculates differences between order components of the average quantized LSP parameter and corresponding order components of quantized LSP parameter in a current frame, respectively (Col.4, lines 4-30); and,

a first mode determiner that determines that the frame indicates a speech mode when a difference greater than a predetermined level is calculated between at least one pair of order components (Col.4, lines 4-30).

As per claim 16, Mizuno et al., teaches the mode determining apparatus according to claim 15, further comprising:

an inter-frame change calculator that calculates inter-frame changes in the quantized LSP parameter (Col.4, lines 4-30); and,

a second mode determiner that determines that a period indicates the speech mode when the period shows an inter-frame change greater than a predetermined level, wherein: the average LSP calculator determines that, in part or all of periods other than the period the second mode determiner determined to indicate the speech mode, the quantized LSP parameter is stationary; and the first mode determiner determines whether the periods other than the period determined by the second mode determiner to indicate the speech mode indicate the speech mode (Col.4, lines 4-46).

As per claim 17, Mizuno et al., teaches a multimode speech decoding apparatus comprising: a decoder that decodes a code representing a quantized LPC and generates a quantized LSP parameter; the mode determining apparatus of claim 15, that utilizes the quantized LSP parameter generated in the decoder; and, a random codebook that generates a random codebook vector comprising one of a pulse and noise according to the determination result in the mode determining apparatus (Col.7, line 36 – Col.8, line 9).

As per claim 18, Mizuno et al., teaches a multimode speech decoding apparatus comprising: a decoder that decodes a code representing a quantized LPC and generates a quantized LSP parameter; the mode determining apparatus of claim 15 that utilizes the quantized LSP parameter generated in the decoder; and, a stationary noise

Art Unit: 2654

generator that drives a synthesis filter by means of a random signal obtained from a random codebook, the synthesis filter comprising an LPC parameter obtained from the average quantized LSP parameter, in periods other than the period the mode determining apparatus determined to indicate the speech mode, and superimposes stationary noise generated over decoded speech (Col.7, line 36 – Col.8, line 9).

As per claim 19, Mizuno et al., teaches a multimode speech coding apparatus comprising:

- an LPC analyzer that performs LPC analysis of an input signal and calculates an LPC parameter (Col.4, line 47 – Col.5, line 14);

- an LPC quantizer that quantizes the LPC parameter and obtains a quantized LSP parameter (Col.4, line 47 – Col.5, line 14);

- the mode determining apparatus of claim 15, that utilizes the quantized LSP parameter (Col.2, lines 26-37);

- a noise codebook that generates a noise code vector comprising one of a pulse and a noise according to the determination result in the mode determining apparatus (Col.7, line 36 – Col.8, line 9).

As per claim 20, Mizuno et al., teaches the multi-mode speech coding apparatus of claim 19, further comprising a search range determiner that, in the periods other than the period the mode determining apparatus determines to indicate the speech mode, sets a search range for a pitch period in an adaptive codebook greater than a subframe length (Col.7, line 36 – Col.8, line 9).

As per claim 21, a mode determining method comprising:

Art Unit: 2654

detecting changes in a quantized LSP parameter in a predetermined period per order component (Col.4, line 47 – Col.5, line 14);

determining, based on the detection result of said detecting step, whether or not the predetermined period indicates a speech mode (Col.4, line 47 – Col.5, line 14).

As per claim 22, Mizuno et al., teaches a mode determining method comprising:

calculating an average quantized LSP parameter in a period in which a quantized LSP parameter is stationary (Col.4, lines 4-30);

calculating differences between order components of the average quantized LSP parameter and corresponding order components of a quantized LSP parameter in a current frame, respectively (Col.4, line 47 – Col.5, line 14); and,

determining that the frame indicates a speech mode when a difference greater than a predetermined level is calculated between at least one pair of order components (Col.4, line 47 – Col.5, line 14).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Aoyagi (5,826,221) teaches vocal tract prediction coefficient coding and decoding circuitry capable of adaptively selecting quantized values and interpolation values.

Swaminathan et al., (5,596,676) teaches mode-specific method and apparatus for encoding signals containing speech.

Art Unit: 2654

Yasunaga et al., (6,453,288) teaches a method and apparatus for producing component of excitation vector.

Ehara (6,334,105) teaches multimode speech encoder and decoder apparatus.

Swaminathan et al., (5,751,903) teach low rate multi-mode CELP codec that encodes line spectral frequencies using an offset.

Alanara et al., (6,269,331) teach transmission of comfort noise parameters during discontinuous transmission.

Adlersberg et al., (5,012,519) teach a noise reduction system.

Akagiri (5,490,130) teaches an apparatus and method for compressing a digital input signal in more than one compression mode.

Zinser (5,060,269) teach a hybrid switched multi-pulse/stochastic speech coding technique.


Akamine et al., (5,265,167) teach speech coding and decoding apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vijay B. Chawan whose telephone number is (571) 272-7601. The examiner can normally be reached on Monday Through Friday 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2654

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vijay B. Chawan
Primary Examiner
Art Unit 2654

vbc
9/29/05

VIJAY CHAWAN
PRIMARY EXAMINER